DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001992
Date Inspected: 19-Apr-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1400
OSM Departure Time: 300
Location: Shanghai, China

CWI Name:	An Qingxiang			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower skin plates

Summary of Items Observed:

On this day CALTRANS OSM Quality Assurance Inspector (QA) Steve Hall was present during the times noted above for observations relative to the fabrication of the SAS Superstructure being performed by Zhenhua Port Machinery Company (ZPMC) at Changxing Island, in Shanghai, China. QA observed and/or found the following:

New Tower Shop and 89 meter mock-up

QA observed ZPMC qualified welding personnel perform the last three SAW passes on one side of the groove weld joining tower skin plates, weld# SSD1_SA16E1G-10A following the guide lines of approved WPS# WPS-B-T-2221-B-U3c-S. QA observed 2 ZPMC Quality Control (QC) inspectors in the vicinity of the welding operations including ZPMC CWI identified as An Qingxiang. There was also 1 American Bridge/Fluor (ABF) QC inspector in the area as well. ZPMC and ABF Quality Control (QC) inspectors performed a full visual inspection of the completed SAW weld and it appeared to be in compliance with AWS D1.5 2002 and the contract documents. QA and QC monitored the welding process continuously until its completion. The welder identification and the welding parameters as measured with Quality Controls calibrated instruments appeared to be in conformance with the posted WPS's and were as follows:

SSD1-SA16E1G-10A SAW
Pre-heat: 160°C – 180°C Volts: 32.9 – 33.6 Amps: 653 – 670 Travel speed: 620 - 627mm/min

Welder ID# 052917

QA observed ZPMC qualified welding personnel perform the SAW groove weld joining tower skin plates, component# P793 (E)-1 SA216 (E) joint# ESD1-SA216 A/K-13B. QA observed 2 ZPMC QC inspectors in the vicinity of the welding operations including ZPMC CWI identified as An Qingxiang. There was also 1 American Bridge/Fluor (ABF) inspector in the area as well. ZPMC and ABF Quality Control (QC) inspectors performed a full visual inspection of the SAW root weld on the above mentioned weld and it appeared to be visually non-compliant with AWS D1.5 2002 and the contract documents due to four areas of what appeared to be slag inclusions on or near the surface of the weld. ZPMC CWI identified as An Qingxiang and ABF QC inspector identified as Li Hanjie instructed ZPMC qualified welding personnel to grind the areas to sound metal and repair by welding using the SMAW process following the guide lines of approved repair WPS# WPS-345-SMAW-1G-repair. The repaired areas measured approximately 150mm to 300mm in length. After the completion of the repairs the repaired areas were Visually Tested (VT) by both QA and QC and appeared to comply with AWS D1.5 2002 visual acceptance criteria and the contract documents. After the completion of the repairs and VT ZPMC qualified welding personnel proceeded with SAW welding of this joint. ZPMC utilized the following two WPS's to perform the welding on this joint: WPS-B-T-2221-B-U3c-S-1 for the root pass and WPS-B-T-2221-B-U3c-S for all subsequent weld passes. They ran six additional weld passes by the end of the shift. QC informed QA that ZPMC will turn this skin plate over, back gouge and continue SAW welding the other side of this plate tomorrow (4/20/08). As of this date SAW welding has not been completed on either side of this plate. The welder identification and the welding parameters as measured with Quality Controls calibrated instruments appeared to be in conformance with the posted WPS's and were as follows:

ESD1-SA216 A/K-13B (SAW) WPS-B-T-2221-B-U3c-S-1 (root pass)
Pre-heat: 120°C Volts: 31 Amps: 480 Travel speed: 418mm/min

ESD1-SA216 A/K-13B (SAW) WPS-B-T-2221-B-U3c-S (inter passes)
Pre-heat: 120°C - 140°C Volts: 32.8 - 33 Amps: 684 - 689 Travel speed: 601mm/min

Welder ID# (SMAW repair)
040690

Welder ID# (SAW)
040634

Other general observations

QA observed ZPMC personnel performing flame straightening process on the following plates following the guide lines of flame straightening procedure HSR1 (T) 828:
P1292 (E)

QA observed ZPMC personnel performing flame straightening process on the following plates following the guide lines of flame straightening procedure HSR1 (T) 825:
P79151-P59151

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Summary of Conversations:

As noted above

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Patrick Lowry (858)-344-2712, who represents the Office of Structural Materials for your project.

Inspected By:	Hall,Steven	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer